ORIGINAL ARTICLE

Frequency of Acute Myocardial Injury in Patients with Upper Gastrointestinal Bleeding

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ABSTRACT

Objective: To determine the frequency of acute myocardial injury in patients with upper gastrointestinal bleeding.

Methods: A total member of 110 patients with upper gastrointestinal hemorrhage presenting in the medical ward of Services Hospital, Lahore, were included in this cross sectional survey over a period of six months.

Results: The frequency of acute myocardial injury in patients with upper gastrointestinal bleeding was found to be 11.82%. Out of these patients with acute myocardial injury 61.54% were males and 38.46% were females. The frequency of acute myocardial injury was highest (46.15%) in patients between 51- 60 years of age.

Conclusion: The frequency of acute myocardial injury is high among patients with upper gastrointestinal bleeding and this co-morbidity should be considered and managed in patients presenting with upper gastrointestinal bleeding especially elderly males.

Key words: Upper gastrointestinal bleeding, acute myocardial injury, frequency.

INTRODUCTION

Upper gastrointestinal bleeding is one of the serious medical emergencies and a major cause of morbidity and mortality. Upper gastrointestinal bleeding means bleeding from upper gastrointestinal tract proximal to ligament of treitz[1]. The most common cause of upper gastrointestinal bleeding in our country is bleeding from esophageal and gastric varices due to portal hypertension. Peptic ulcer, gastric erosions, reflux oesophagitis, Carcinoma of the stomach and Mallory-weiss tear are the other common causes of upper gastrointestinal bleeding[2]. Acute upper gastrointestinal bleeding can cause hypovolemia, hypotension and diminished oxygen carrying capacity of blood leading to acute myocardial injury. Cardiac troponin I rises rapidly after acute myocardial injury. Raised cardiac troponin I levels have been reported in patients with upper gastrointestinal bleeding indicating acute myocardial injury in these patients[3,4]. The prevalence of acute myocardial injury in patients with upper gastrointestinal bleeding reported in various studies is 7.74%[5].

There is not enough data available regarding frequency of acute myocardial injury in patients with upper gastrointestinal bleeding in our community. Upper gastrointestinal hemorrhage is common presentation in our setup. Symptoms and signs of acute myocardial injury can be masked by those of upper gastrointestinal bleeding. This study was carried out to determine the frequency of acute myocardial injury in patients with upper gastrointestinal bleeding, so that if this percentage is found high, recommendations can be made for proper screening and subsequent management of patients regarding acute myocardial injury.

MATERIAL AND METHODS

This Cross sectional survey was conducted in the Department of Medicine, Services Hospital, Lahore. Taking the expected percentage of acute myocardial injury in patients of upper gastrointestinal bleeding to be 7.74% calculated sample size was 110 patients with 5% margin of error and 95% confidence level. The technique was non probability purposive sampling.

Inclusion criteria:

Out of the patients admitted in the department of medicine Services Hospital, Lahore, following patients of acute upper gastrointestinal bleeding was included in the study

- The patients of ages between 18-60 years
- Both male and female patients
- The patients with upper gastrointestinal bleeding as per operational definition.

Exclusion criteria:

- Patients having cerebrovascular disease on history and physical examination
- Patients having congestive cardiac failure on history and physical examination.

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- Patients having chronic kidney disease on investigations (Serum creatinin> 1.3 mg/dl)

Data collection procedure: According to the calculated sample size, 110 patients with upper gastrointestinal bleeding meeting the inclusion and exclusion criteria were included in the study. Informed consent was taken from the patients. Patients name, age, sex and hospital number was recorded. ECG, CK-MB and cardiac Troponin I was don by kit method. Acute myocardial injury was diagnosed as per operational definition. All information was recorded on a Performa designed for the purpose of study.

Date analysis procedure: All the data was entered and analyzed using SPSS version 10.0. The quantitative variable like age was presented by calculating mean and standard deviation. The qualitative variable like gender and acute myocardial injury were presented by calculating frequency and percentages.

RESULTS

Out of the total no. of 110 patients 43 (39.09%) were between 51-60 years of age, 29(26.36%) were between 41-50 years, 26(23.64%) were between 31-40 years, 12 (10.91%) were between 18-30 years of age. Mean and standard deviation was 37.75 ± 4.21 years (Table1). Fifty seven (51.82%) patients were females and 53(48.18%) were males (Table 2). Evidence of acute myocardial injury as per operational definition was found in 13(11.82%) patients with upper gastrointestinal bleeding, out of 110 patients included in the study (Table-3).

Out of the 13 patients having evidence of acute myocardial injury 8(61.54%) were males and 5(38.46%) were females. Six (46.15%) patients were between 51-60 years of age, 4(30.77%) were between 41-50 years, 2(15.38%) were between 31-40 years and only 1(7.69%) was between 18-30 years (Table 4).

Table 1: Age distribution (n=110)

Age(in years)	**=n**	**%age**
18-30	12	10.91
31-40	26	23.64
41-50	29	26.36
51-60	43	39.09
Total	**110**	**100**
Mean and sd	37.75±4.21	

Table 2: Gender distribution (n=110)

Gender	**=n**	**%**
Male	53	48.18
Female	57	51.82

Table 3: Frequency of acute myocardial injury in patients with upper gastrointestinal bleeding(UGIB) (n=110)

Acute myocardial injury in UGIB	**=n**	**%**
Yes	13	11.82
No	97	88.18

Table 4: Stratification of acute myocardial injury in patients with upper gastrointestinal bleeding (UGIB) for age and gender (n=13)

Age (years)	**=n**	**Gender**	**=n**
18-30	1(7.69)	Male	8(61.54)
31-40	2(15.38)	Female	5(38.46)
41-50	4(30.77)		
51-60	6(46.15)		

DISCUSSION

Gastrointestinal bleeding, particularly when severe, is frequently associated with myocardial infarction but myocardial infarction frequently remains undiagnosed in such patients because of failure to test for myocardial infarction. The presence of myocardial infarction in patients with acute upper gastrointestinal bleeding produces a distinct clinical syndrome that differs from either disease alone. The symptoms of myocardial infarction are usually masked by those of upper gastrointestinal bleeding[6]. Risk of myocardial infarction in patients with acute upper gastrointestinal bleeding has been evaluated in different studies carried out in other countries[7, 8].

But no data is available regarding the frequency of acute myocardial injury in patients with upper gastrointestinal bleeding in our community, so this study was planned to find out the percentage of patients suffering from acute myocardial injury in patients with upper gastrointestinal bleeding in our setup, so that recommendation can be made for screening of acute myocardial injury in such cases and subsequent management.

Out of 110 patients with upper gastrointestinal bleeding, 13(11.82%) patients in our study had evidence of acute myocardial injury as per operational definition. Out of these 13 patients with acute myocardial injury 8(61.54%) were males and 5(38.46%) were females. Frequency of acute myocardial injury was highest (46.15%) amongst the patients between age group 51- 60 years. WU IC reported the prevalence of acute myocardial injury in patients with upper gastrointestinal bleeding to be 7.74%[5].

In another study conducted by Emenlike E and Co-workers, the frequency of acute myocardial infarction was found to be 13%[9]. It is evident from the results of the study that frequency of myocardial injury is high in patients with upper gastrointestinal bleeding and this is comparable to the studies carried out by other research workers.

CONCLUSION

The frequency of acute myocardial injury is high among patients with upper gastrointestinal bleeding so, it is recommended that every patients suffering from upper gastrointestinal bleeding should be screened for acute myocardial injury. However, it is recommended that every institution should have their own surveillance so that effective steps can be taken to manage this co-morbidity.

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